15

Claims

What is claimed is:

1　1. In a computer controlled user interactive display

2　system, a display interface implementation for enabling

3　an interactive user to select specific items on a display

4　screen with crowded selectable items comprising:

5　　　user controlled means for moving an on-screen

6　pointer to approach said selectable items;

7　　　means for setting a predetermined minimum clearance

8　factor required for user selection of an item by said

9　pointer;

10　　　means for determining whether a selectable item

11　being approached by said pointer has said minimum

12　clearance factor; and

13　　　means responsive to a determination that said

14　approached item does not have said minimum clearance

15　factor for reducing the size of said pointer.

1　2. The display system of claim 1 wherein said items are

2　icons.

1　3. The display system of claim 2 wherein said reduced

2　size pointer has a reduced minimum clearance factor.

1   4.   The display system of claim 3 wherein said minimum

2   clearance factor is defined by:

3   Minimum Clearance = d + s wherein:

4   d is the widest visible dimension of the approached

5   icon, and

6   s is the space between the approached icon and the

7   closest adjacent icon in a continuation of the d

8   dimension line.

1 5. In a computer controlled user interactive display
2 system, a display interface implementation for enabling
3 an interactive user to select specific icons on a display
4 screen with crowded selectable icons comprising:
5   user controlled means for moving an on-screen
6 pointer to approach said selectable icons;
7   means for setting a predetermined minimum clearance
8 distance required for user selection of an icon by said
9 pointer;
10   means for determining whether a selectable icon
11 being approached by said pointer is within said minimum
12 clearance distance from said pointer;
13   means for determining whether said approached icon
14 has said minimum clearance distance from its adjacent
15 icons; and
16   means responsive to a determination that said
17 approached icon does not have said minimum clearance
18 distance from adjacent icons for automatically reducing
19 the size of said pointer.

1 6. The display system of claim 5 wherein said reduced
2 size pointer has a reduced minimum clearance distance
3 whereby said approached icon does have said minimum
4 clearance distance from adjacent icons.

1 7. A method for enabling an interactive user to select
2 specific items on a display screen with crowded
3 selectable items in computer controlled user interactive
4 display systems comprising:
5   moving an on-screen pointer to approach said
6 selectable items;
7   setting a predetermined minimum clearance factor
8 required for user selection of an item by said pointer;
9   determining whether a selectable item being
10 approached by said pointer has said minimum clearance
11 factor; and
12   reducing the size of said pointer responsive to a
13 determination that said approached item does not have
14 said minimum clearance factor.

1 8. The method of claim 7 wherein said items are icons.

1 9. The method of claim 8 wherein said reduced size
2 pointer has a reduced minimum clearance factor.

1 10. The method of claim 9 wherein said minimum clearance
2 factor is defined by:
3   Minimum Clearance = d + s wherein:
4   d is the widest visible dimension of the approached
5 icon, and
6   s is the space between the approached icon and the
7 closest adjacent icon in a continuation of the d
8 dimension line.

1 11. A method enabling an interactive user to select
2 specific selectable icons on a display screen with
3 crowded selectable icons in computer controlled user
4 interactive display systems comprising:
5   moving an on-screen pointer to approach said
6 selectable icons;
7   setting a predetermined minimum clearance distance
8 required for user selection of an icon by said pointer;
9   determining whether a selectable icon being
10 approached by said pointer is within said minimum
11 clearance distance from said pointer;
12   determining whether said approached icon has said
13 minimum clearance distance from its adjacent icons; and
14   automatically reducing the size of said pointer
15 responsive to a determination that said approached icon
16 does not have said minimum clearance distance from
17 adjacent icons.

1 12. The method of claim 5 wherein said reduced size
2 pointer has a reduced minimum clearance distance whereby
3 said approached icon does have said minimum clearance
4 distance from adjacent icons.

1   13. A computer program having program code included on a

2   computer readable medium for enabling an interactive user

3   to select specific items on a display screen with crowded

4   selectable items in a computer controlled user

5   interactive display system comprising:

6   user controlled means for moving an on-screen

7   pointer to approach said selectable items;

8   means for setting a predetermined minimum clearance

9   factor required for user selection of an item by said

10   pointer;

11   means for determining whether a selectable item

12   being approached by said pointer has said minimum

13   clearance factor; and

14   means responsive to a determination that said

15   approached item does not have said minimum clearance

16   factor for reducing the size of said pointer.

1   14. The computer program of claim 13 wherein said items

2   are icons.

1   15. The computer program of claim 14 wherein said

2   reduced size pointer has a reduced minimum clearance

3   factor.

1   16. The computer program of claim 15 wherein said

2   minimum clearance factor is defined by:

3   Minimum Clearance = d + s wherein:

4   d is the widest visible dimension of the approached

5   icon, and

6   s is the space between the approached icon and the

7   closest adjacent icon in a continuation of the d

8   dimension line.

1 17. A computer program having program code included on

2 a computer readable medium for enabling an interactive

3 user to select specific icons on a display screen with

4 crowded selectable icons in a computer controlled user

5 interactive display systems comprising:

6   user controlled means for moving an on-screen

7 pointer to approach said selectable icons;

8   means for setting a predetermined minimum clearance

9 distance required for user selection of an icon by said

10 pointer;

11   means for determining whether a selectable icon

12 being approached by said pointer is within said minimum

13 clearance distance from said pointer;

14   means for determining whether said approached icon

15 has said minimum clearance distance from its adjacent

16 icons; and

17   means responsive to a determination that said

18 approached icon does not have said minimum clearance

19 distance from adjacent icons for automatically reducing

20 the size of said pointer.

1 18. The computer program of claim 17 wherein said

2 reduced size pointer has a reduced minimum clearance

3 distance whereby said approached icon does have said

4 minimum clearance distance from adjacent icons.

1   19.   In a computer controlled user interactive display
2   system, a display interface implementation for directing
3   a user's attention to specific selectable items on a
4   display screen with crowded selectable items comprising;
5   user controlled means for moving an on-screen
6   pointer to approach a cluster of said selectable items;
7   and
8   means for determining whether the items in said
9   cluster have sufficient clearance for said pointer to
10 select separate items in said cluster; and
11   means responsive to a determination of insufficient
12 clearance for sequentially enlarging the dimensions of
13 each of the items in said cluster relative to the pointer
14 size whereby there is sufficient clearance.

1   20.   The computer controlled user interactive display
2   system of claim 19 wherein each item is activated for
3   selection when said dimensions are enlarged.

1   21. A method for directing a user's attention to

2   specific selectable items on a display screen with

3   crowded selectable items in computer controlled user

4   interactive display systems comprising:

5   moving an on-screen pointer to approach a cluster of

6   said selectable items;

7   determining whether the items in said cluster have

8   sufficient clearance for said pointer to select separate

9   items in said cluster; and

10   responsive to a determination of insufficient

11   clearance, sequentially enlarging the dimensions of each

12   of the items in said cluster relative to the pointer size

13   whereby there is sufficient clearance.

1   22. The method of claim 21 wherein each item is

2   activated for selection when said dimensions are

3   enlarged.

1   23.   A computer program having program code included on a
2   computer readable medium for directing a user's attention
3   to specific selectable items on a display screen with
4   crowded selectable items in computer controlled user
5   interactive display systems comprising:
6   user controlled means for moving an on-screen
7   pointer to approach a cluster of said selectable items;
8   means for determining whether the items in said
9   cluster have sufficient clearance for said pointer to
10   select separate items in said cluster; and
11   means responsive to a determination of insufficient
12   clearance for sequentially enlarging the dimensions of
13   each of the items in said cluster relative to the pointer
14   size whereby there is sufficient clearance.

1   24.   The computer controlled user interactive display
2   system of claim 23 wherein each item is activated for
3   selection when said dimensions are enlarged.